Day 5

1. The baby bongos are attached above the big bongos.

2. Mrs. Raybourn washes the contents of a sieve into its jar.

3. This razor fish is not plankton. It was just in the wrong place at the wrong time.

4. My, what big teeth you have!

5. A preserved sample, labeled and ready to be stored.

6. Early morning off the port rail.

Date: August 18, 2005
Time: 13.52 GMT 9:52 a.m. EDT

Latitude: 41.36 N
Longitude: 67.11 W
Wind direction: N (343 degrees)
Wind speed: 2.6 knots
Sea water temperature: 17.9°C
Sea level pressure: 1019.3 millibars
Cloud cover: 00 Clear

Question of the Day: What kind of quantitative and qualitative data does your doctor take when you go in for a checkup? (Read the science log below for explanations of these terms.)

Yesterday's Answer: Phytoplankton are eaten by zooplankton, which are in turn eaten by penguins, sea birds, fishes, squid, seals, and humpback and blue whales.

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Science and Technology Log: On some of the plankton tows, we attach a set of “baby bongos”, which are a smaller version of the big bongos. Their nets are made of a much finer mesh, so they catch even smaller kinds of plankton. The samples retrieved from the baby bongos are sent to scientists who are working on genetic analysis. By examining the DNA present in the samples, they can discover new species and determine how known species are distributed in the water.

After the nets are washed down, and their contents are in the sieves, we bring the sieves inside to preserve the samples. The plankton from each net go into separate jars, two jars for each big bongo haul, and two more if we do a baby bongo haul. The plankton are carefully washed out of the sieve and into the jars with a small stream of water. Then we add formaldehyde to preserve the samples in the big bongo jars, and ethanol to preserve the genetic samples in the baby bongo jars. Each jar is labeled to show where it was collected, and stored until we get to shore. The big bongo samples each have a special purpose. One will be analyzed to see what kinds of ichthyoplankton, or tiny baby fish, are present. The second jar will be analyzed both qualitatively and quantitatively. Qualitative data tells *what kind* of plankton you have. Quantitative data tells *how much* plankton the jar contains. You can think of these as “the what (qualitative) and how much of the what (quantitative)”.

All of this data is an indicator of the health of the ocean ecosystem. It’s kind of like when you go to the doctor for a checkup. Your doctor takes your pulse and your temperature, looks in your mouth and ears, tests your reflexes, and takes other kind of data to see how healthy you are. The scientists involved in this project are giving the ocean a checkup. We are collecting data on the water itself (salinity and temperature at different depths), on the plankton that live in it, and on the weather. Over the years, patterns develop that help scientists know what is “normal” and what is not, how weather influences the ocean ecosystem, and how to predict future events.

Personal Log: I decided not to take a nap yesterday afternoon, and I can feel the difference this morning. It was hard to get up! Sometimes it is hard to remember what day it is because of the six-hour watch schedule. Instead of a nap yesterday, I went up on the hurricane deck with my book and just sat. I read a little, watched the other crew do a bongo haul, dozed a little, but mostly just watched the sky and the ocean. The sea stretches all the way to the horizon in every direction, the sun sparkles on the water, a few feathery clouds float in the sky. Very occasionally, a far away fishing boat or cargo ship slips by. Life is good. We are planning to deploy our drifter buoy this afternoon. More about that tomorrow.

E-mail: scientist5.albatross@noaa.gov (during cruise) raybojbe@cps.k12.va.us (after cruise)